



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,926	12/30/2005	Masataka Kira	126514	3681
25944 7590 06/25/2009 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER RUSH, ERIC				
ART UNIT 2624		PAPER NUMBER		
MAIL DATE 06/25/2009		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/562,926

**Applicant(s)**

KIRA, MASATAKA

**Examiner**

ERIC RUSH

**Art Unit**

2624

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 26 May 2009 has been entered.

### ***Response to Amendment***

2. This action is responsive to the amendments and remarks received 26 May 2009. Claims 1, 2 and 4 - 25 are currently pending.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The rejections to claims 1 - 2, 4 - 11 and 12 - 25 under 35 U.S.C. 112, second paragraph, are hereby withdrawn in view of the amendments and remarks received 26 May 2009.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 2, 4 - 15, 18, 19, 24 and 25 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. The Federal Circuit<sup>1</sup>, relying upon Supreme Court precedent<sup>2</sup>, has indicated that a statutory “process” under 35 U.S.C. 101 must (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. This is referred to as the “machine or transformation test”, whereby the recitation of a particular machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility (See *Benson*, 409 U.S. at 71-72), and the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity (See *Flook*, 437 U.S. at 590”). While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform an article nor are positively tied to a particular machine that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. That is, the Applicant has provided no explicit and deliberate definitions of “extracting”, “processing” or “generating” to limit the steps to the digital form and physical form for image processing and the claim language itself is sufficiently broad enough to read on an individual looking at a pair of images and mentally stepping

---

<sup>1</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

<sup>2</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

through the process. The Examiner notes that structure in the preamble is not sufficient to overcome the rejection and structure needs to be significant to the basic inventive concept and not just a pre/post solution activity, such as structure for the acquisition of the image(s). Furthermore, the Examiner notes that in order for the claims to be considered as a transformation there needs to be a non-pure-data depiction outputted.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 16, 18, 20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Wood U.S. Patent No. 6,023,263.

- With regards to claim 1, Wood teaches a method for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said method comprising: a removed region extraction step of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between the left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Wood, Fig. 2, Column 3 Line 57 -

Column 4 Line 40) and a removed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Wood, Column 4 Lines 3 - 41)

- With regards to claim 16, Wood teaches a stereoscopic image generating apparatus for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said stereoscopic image generating apparatus comprising: removed region extraction means of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) and a removed region processing means for carrying our processing of generating the stereoscopic image set of images so as to make more inconspicuous the removed region extracted in the removed region extraction means than a region remaining after eliminating the removed region from the target regions. (Wood, Column 4 Lines 3 - 41)

- With regards to claim 18, Wood teaches a stereoscopic viewing method of watching a stereoscopic image set of images having a left image and a right image for stereoscopic vision, said stereoscopic viewing method comprising: (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) a removed region extraction step of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between left and right target regions which do not include a pair of fused points corresponding to each other in left image and the right image; (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) and a removed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Wood, Column 4 Lines 3 - 41)
  
- With regards to claim 20, Wood teaches a stereoscopic viewing apparatus for showing a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said stereoscopic viewing apparatus comprising: removed region extraction means of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between left and right target regions which do not include a pair of fused

points corresponding to each other in the left image and the right image; (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) and a removed region processing means for carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the removed region extracted in the removed region extraction means than a region remaining after eliminating the removed region from the target regions. (Wood, Column 4 Lines 3 - 41)

- With regards to claim 22, Wood teaches a computer readable medium storing a program for controlling an apparatus for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Column 4 Line 62 - Column 5 Line 41) said program causing a stereoscopic image generating apparatus to execute: a removed region extraction step of extracting a more inconspicuous region as a removed by identifying the more inconspicuous region between the left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) and a removed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the removed region extracted in the removed region extraction step than a region

remaining after eliminating the removed region from the target regions.

(Wood, Column 4 Lines 3 - 41)

***Claim Rejections - 35 USC § 103***

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 2, 5, 7, 9, 11, 13, 15, 17, 19, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood U.S. Patent No. 6,023,263 in view of Blake et al. U.S. Publication No. 2005/0232510 A1.

- With regards to claim 2, Wood teaches a method for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said method comprising: a removed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region; (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) and a removed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Wood,

Column 4 Lines 3 - 41) Wood fails to teach extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region. Blake et al. teach a removed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements.

- With regards to claim 5, Wood in view of Blake et al. teach the stereoscopic image generating method as claimed in claim 2. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of blurring the removed region. Blake et al. teach wherein the processing of generating a stereoscopic image so as to make more inconspicuous is a processing of blurring the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on

the disparity patch which induces blur) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Wood in view of Blake et al. with further teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous.

- With regards to claim 7, Wood in view of Blake et al. teach the method as claimed in claim 2. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing contrast of the removed region. Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing contrast of the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which is capable of inducing contrast reduction) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Wood in view of Blake et al. with further teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous.

- With regards to claim 9, Wood in view of Blake et al. teach the method as claimed in claim 2. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing saturation or brightness of the removed region. Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing saturation or brightness of the removed region. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Wood in view of Blake et al. with further teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous.
  
- With regards to claim 11, Wood in view of Blake et al. teach the method as claimed in claim 2. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of bringing a hue of the removed region close to a cold color family. Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more

inconspicuous is a processing of bringing a hue of the removed region close to a cold color family. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Wood in view of Blake et al. with further teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous.

- With regards to claim 13, Wood teaches a stereoscopic image set of images having a left image and a right image for stereoscopic vision, the stereoscopic image set of images being processed so as to make more inconspicuous left and right regions which do not include fused points corresponding to each other in the left image and the right image than a region remaining after eliminating the removed region from the target regions. (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) Wood fails to teach wherein left and right regions which do not include fused points corresponding to each other in the left image and the right image are displayed on a display plane. Blake et al. teach wherein left and right regions which do not include fused points corresponding to each other in the left image and the right image are displayed on a display plane. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3

Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements.

- With regards to claim 15, Wood in view of Blake et al. teach the method as claimed in claim 2. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is one of or a combination of the following processing's: (1) processing of blurring the removed region; (2) processing of reducing contrast of the removed region; (3) processing of reducing saturation or brightness of the removed region; (4) processing of bringing a hue of the removed region close to a cold color family; and (5) processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region from the target regions. Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is one of or a combination of the following processing's: (1) processing of blurring the removed region; (2) processing of reducing contrast of the removed region; (3) processing of reducing

saturation or brightness of the removed region; (4) processing of bringing a hue of the removed region close to a cold color family; and (5) processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 3 Paragraphs 0039 – 0041 and Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of Wood in view of Blake et al. with further teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous.

- With regards to claim 17, Wood teaches a stereoscopic image generating apparatus for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said stereoscopic image generating apparatus comprising: a removed region extraction means of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image; (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) and a removed region processing means of carrying out processing of generating the stereoscopic image set of

images so as to make more inconspicuous the removed region identified by said removed region extraction means than a region remaining after eliminating the removed region from the target regions. (Wood, Column 4 Lines 3 - 41) Wood fails to teach extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region. Blake et al. teach a removed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements.

- With regards to claim 19, Wood teaches a method for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, said stereoscopic viewing method comprising: a removed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image

and the right image; (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) and a removed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Wood, Column 4 Lines 3 - 41) Wood fails to teach extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region. Blake et al. teach a removed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements.

- With regards to claim 21, Wood teaches a apparatus for generating a stereoscopic image set of images having a left image and a right image for

stereoscopic vision, (Wood, Fig. 1, Abstract Column 2 Line 58 - Column 3 Line 20) said apparatus comprising: a removed region extraction means of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image; (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) and a removed region processing means of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the removed region extracted in the removed region extraction means than a region remaining after eliminating the removed region from the target regions. (Wood, Column 4 Lines 3 - 41) Wood fails to teach extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region. Blake et al. teach a removed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which

picture elements are processed picture elements as opposed to original picture elements.

- With regards to claim 23, Wood teaches a computer readable medium storing a program for controlling an apparatus for generating a stereoscopic image set of images having a left image and a right image for stereoscopic vision, (Wood, Column 4 Line 62 - Column 5 Line 41) said program causing said stereoscopic image generating apparatus to execute: a removed region extraction step of extracting a more inconspicuous region as a removed by identifying the more inconspicuous region between the left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) and a removed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Wood, Column 4 Lines 3 - 41) Wood fails to teach extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region. Blake et al. teach a removed region extraction step of extracting left and right regions which do not include

fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region. (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements.

10. Claims 4, 6, 8, 10, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood U.S. Patent No. 6,023,263 as applied to claim 1 above, and further in view of Blake et al. U.S. Publication No. 2005/0232510 A1.

- With regards to claim 4, Wood teaches the method as claimed in claim 1. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of blurring the removed region. Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of blurring the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which induces blur) It would have been

obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous.

- With regards to claim 6, Wood teaches the method as claimed in claim 1. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing contrast of the removed region. Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing contrast of the removed region. (Blake et al., Page 3 Paragraphs 0039 – 0041, a low-pass smoothing operation is performed on the disparity patch which is capable of inducing contrast reduction) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous.

- With regards to claim 8, Wood teaches the method as claimed in claim 1. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing saturation or brightness of the removed region. Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of reducing saturation or brightness of the removed region. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous.
  
- With regards to claim 10, Wood teaches the method as claimed in claim 1. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of bringing a hue of the removed region to a cold color family. Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of bringing a hue of the removed region to a cold color family. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058, the process alters the color of

the inconspicuous region bringing the hue to any color family, which includes cold colors) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous.

- With regards to claim 12, Wood teaches the method as claimed in claim 1. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region from the target regions. Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is a processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region from the target regions. (Blake et al., Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to save

memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous.

- With regards to claim 14, Wood teaches the method as claimed in claim 1. Wood fails to teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is one of or a combination of the following processing's: (1) processing of blurring the removed region; (2) processing of reducing contrast of the removed region; (3) processing of reducing saturation or brightness of the removed region; (4) processing of bringing a hue of the removed region close to a cold color family; and (5) processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region from the target regions. Blake et al. teach wherein the processing of generating the stereoscopic image set of images so as to make more inconspicuous is one of or a combination of the following processing's: (1) processing of blurring the removed region; (2) processing of reducing contrast of the removed region; (3) processing of reducing saturation or brightness of the removed region; (4) processing of bringing a hue of the removed region close to a cold color family; and (5) processing of bringing a hue, saturation or brightness of the removed region close to a hue, saturation or brightness of a region remaining after eliminating the removed region

from the target regions. (Blake et al., Page 3 Paragraphs 0039 – 0041 and Page 4 Paragraph 0053 – Page 5 Paragraph 0058) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to save memory by no longer needing to store the z-buffered information as used by Wood for making the removed region more inconspicuous.

11. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood U.S. Patent No. 6,023,263 in view of Mashitani et al. U.S. Publication No. 2005/0089212 A1.

- With regards to claim 24, Wood teaches a method for generating a stereoscopic image set of images which has a left image and a right image for stereoscopic vision, and forms a virtual stereoscopic image by vergence angles generated from individual points corresponding in the left image and the right image, said method comprising: a removed region extraction step of extracting a more inconspicuous region as a removed region by identifying the more inconspicuous region between left and right target regions which do not include a pair of fused points corresponding to each other in the left image and the right image; (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) and a removed region processing step of

carrying out processing of generating the stereoscopic image set of images so as to make more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Wood, Column 4 Lines 3 - 41) Wood fails to teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of stereoscopic image set of images which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image set of images according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. Mashitani et al. teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of stereoscopic image set of images which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image set of images according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. (Mashitani et al., Page 25 Paragraphs 0352 – 0357 and Page 27 Paragraph 0371) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Mashitani et al. This

modification would have been prompted in order to minimize occlusions and artifacts produced in the stereographic image.

12. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood U.S. Patent No. 6,023,263 in view of Blake et al. U.S. Publication No. 2005/0232510 A1 and further in view of Mashitani et al. U.S. Publication No. 2005/0089212 A1.

- With regards to claim 25, Wood teaches a method for generating a stereoscopic image set of images which has a left image and a right image for stereoscopic vision, and forms a virtual stereoscopic image by vergence angles generated from individual points corresponding in the left image and the right image, said method, comprising: a removed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image; (Wood, Fig. 2, Column 3 Line 57 - Column 4 Line 40) and a removed region processing step of carrying out processing of generating the stereoscopic image set of images so as to make more more inconspicuous the removed region extracted in the removed region extraction step than a region remaining after eliminating the removed region from the target regions. (Wood, Column 4 Lines 3 - 41) Wood fails to teach extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which

are displayed on a display plane as a removed region and a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of a stereoscopic image which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. Blake et al. teach a removed region extraction step of extracting left and right regions which do not include fused points corresponding to each other in the left image and the right image which are displayed on a display plane as a removed region; (Blake et al., Figs. 6 & 7, Page 2 Paragraphs 0025 – 0026 and Page 3 Paragraphs 0035 - 0041) Blake et al. fail to teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of a stereoscopic image set of images which are prepared in advance to form the virtual stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image set of images according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. Mashitani et al. teach a vergence angle modifying step of increasing a stereoscopic effect by carrying out deformation processing of a left image and a right image of a stereoscopic image set of images which are prepared in advance to form the virtual

stereoscopic image, by increasing or decreasing the vergence angles generated by the individual points of the stereoscopic image set of images according to a prescribed rule, and by altering a depth of the virtual stereoscopic image. (Mashitani et al., Page 25 Paragraphs 0352 – 0357 and Page 27 Paragraph 0371) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wood with the teachings of Blake et al. This modification would have been prompted in order to provide a user with information regarding which picture elements are processed picture elements as opposed to original picture elements. Furthermore, it would have been obvious to modify the combined teachings of Wood in view of Blake et al. with the teachings of Mashitani et al. This modification would have been prompted in order to minimize occlusions and artifacts produced in the stereographic image.

### ***Response to Arguments***

13. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Morimura et al. U.S. Patent No. 6,215,899; which is directed to a motion and disparity estimation method and image synthesis method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC RUSH whose telephone number is (571)270-3017. The examiner can normally be reached on 7:30AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C Bella/  
Supervisory Patent Examiner, Art  
Unit 2624

/E. R./  
Examiner, Art Unit 2624